

Influence of platelet rich fibrin on osteointegration of titanium implants stabilized with two different microgaps

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Abstract

Objective: To evaluate the roughness of slots of three orthodontic ceramic brackets.

Materials and Methods: Three ceramic bracket brands (Encore, Reflections and Inspire ICE) were included in the study. The bottom of each slot of every bracket was selected for evaluation and pictures were taken by optical microscopy at magnification (20x) for a general estimation of the roughness. Then the roughness parameters (Sa, Sq, St, Sz) of every slot were defined in a 3D optical profilometer in a higher magnification and 3D-images were obtained.

Results: Optical microscope pictures revealed a variety of textural characteristics of slots for the brackets tested. Metallic slots presented grooves and striations whereas plastic slots presented peaks and pits. Inspire ICE presented the highest Sa and Sq value, statistically higher than the other brackets tested. The Reflections bracket exhibited the second highest Sa value, which statistically was higher among the other brackets. Reflections presented the highest Sz and St values, which were statistically significant higher than the other brackets, followed by Inspire ICE which presented statistically significant higher values compared to Encore.

Conclusion: 3D-images and roughness parameters of slots presented significant differences among the tested brackets. The addition of metallic slots to some of the tested brackets produced a statistically decrease in the average roughness with ceramic slots. Polycrystalline ceramic brackets presented no significantly difference with metal reinforced ceramic brackets compared with mono crystalline brackets. Encore exhibited low roughness parameters.